

ANTICIPATION OF NORMAL SOUND-CHANGES IN INDO-ARYAN.

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[Read at a meeting of the Philological Society on Friday, 7th February, 1936.]

THE establishment of the regularity of sound-change in linguistic development was among the most important of the contributions of the *Junggrammatiker* in the last quarter of the nineteenth century to the science of Comparative Linguistics. Some, in the first enthusiasm of the discovery, were tempted to go too far and to see in this regularity, depending as it did on the unconscious nature of these changes, an equivalent to the necessity of the laws of natural science; and in so far as that claim was made, it was rightly attacked. Nevertheless, after more than fifty years the principle of regularity remains the basis of all comparative and historical linguistics.

Meillet (*Introduction à l'étude comp. des langues i.-e.*, 7th ed., p. 26) expresses this principle thus: "If an articulation is kept (or changed) in one word, it is kept (or changed) in the same degree in all the words of the same language in which it occurs under the same conditions." The necessity for the proviso "in which it occurs under the same conditions" was appreciated from the beginning of the new movement; for it was obvious to the propounder of Grimm's Law that the correspondence Latin *t* = Greek *t* = Gothic *p* (*trēs*, *τρεις*, *preis*) did not apply to the representatives of an Indo-European *t* preceded by *s* (*est*, *ἐστί*, *ist*) or by *p* (*κλέπτω*, *hlifta*).

Such difference of condition might consist in difference of neighbouring sounds, as in the clear instance just given; or difference in the position of the sound in question within the word (Latin *trēs*, French *trois*, but Lat. *patrem*, Fr. *père*); difference in the length of the word (Skt. *ō* of *ghōtakah* remains *ō* in Bihārī *ghōṛā*, but has become *ō* in the lengthened form *ghoṛāwā*); or in difference of accentual condition. As an example of the last, the apparent grave irregularities in the correspondences of Grimm's Law, in which, e.g., a Latin medial

t corresponded sometimes to a Germanic *p* as in Gothic *brōþar*, sometimes to *ð* as in Gothic *faðar*, were recognized by Verner as due to an original difference of accent. For *brōþar* corresponded to Skt. *bhrātā*, *faðar* to Skt. *pitā*. The variation between English *birth* (Germanic **burpi-*) and German *geburt* (Germanic **-burdi-*) corresponded to the variety of accent attested by the two Sanskrit forms, *bhṛtīh* and *bhṛtīh*.

Such differences of condition outlined above, which lead to the different development of originally identical or similar sounds, are capable of more or less exact definition; and the phonetic development consequent on such differences is perfectly regular.

But there exist in speech other differences of condition not so easily defined or exactly evaluated. These are differences depending upon the frequency of the use of any particular word and the degree of audibility or clear articulation necessary for its being understood by the hearer. Some of these, together with the sound-changes involved in them, will be considered here.

To quote Meillet again (op. cit., p. 28): "Terms of politeness or address are subject to shortenings which make them unrecognizable; *msyō* is not a regular phonetic treatment of *mon sieur*; it is the same with all the words a mere hint of which is enough to make them understood and which consequently people do not trouble to pronounce completely: OHG. *hiutu* (Germ. *heute*) is not a normal treatment of *hiu tagu* 'on this day'."

The terms of address and politeness need not delay us. The phenomenon is well known: English *miss* for *mistress*, *kyu* for *thank you*. It will suffice to take a few examples from another linguistic field, the Indo-Aryan. Already in Sanskrit of the Śatapathabrāhmaṇa appears the honorific term of address *bhāvān* 'your Honour', a quite abnormal development of *bhāgavān* 'gracious one' with its even more violently contracted vocative *bhōh* for *bhāgavaḥ*.¹ In the

¹ Uhlenbeck, *Etym. Wb. der altindischen Spr.*, s.v. According to Wackernagel, *Altindische Grammatik*, i, § 48b, *ō* of this form represents an original diphthong and is not from *-ava-*.

Middle Indian of Aśoka, which in normal words preserves Skt. *-avi-* unchanged, Skt. *sthāvira-* 'old' has become *thaira-* and *thēra-*, doubtless owing to the use of this word as descriptive of, and as a term of address for, the Buddhist *bhikkhu*. Among modern languages Marāṭhī, which preserves Skt. *-m-* as *-v-* (e.g. *gāv*, *gāv* < *grāma-*, *gosāvī* < *gōsvāmin-*), in *sāī*, a term of address equivalent to 'Sir' < Skt. *svāmin-*, has lost it altogether. In Eastern Panjabi *bhāī* 'brother' shows normal development of Skt. *bhrātṛ-*, but used as a term of address, like American *bo*, it becomes *vha'i*.¹

Words such as these contribute no real meaning to the sentence; at the most they indicate a certain attitude of mind on the part of the speaker; and it is enough merely to indicate their existence. Both use and uselessness have contributed to their deformation.

But the same applies to other words too, though often in a less degree. Indeed it is the whole range from full attention to complete absence of attention on the part of the speaker which makes it so hard to formulate these sound-changes in a regular way.

To begin with, however, it is not only whole words, but also a particular part of otherwise normal words of full meaning, which is not fully and clearly articulated. I have shown elsewhere (*JRAS.*, 1927, 227 f.) that throughout the history of Indo-Aryan the terminational element shows a liability to change, a phonetic weakness, not proper to similar sounds in the body of the word, however long. Vedic Sanskrit depended essentially upon inflection, consisting to a great extent in the termination, to express grammatical relationship. Nevertheless, although it preserves IE. *-dh-* in the body of the word (*mádhu* = Gk. *μέθυ* = Eng. *mead*, etc.), the endings of the 1st plural middle were *-mahē*, *-mahī*, where *-h-* on the evidence of Avestic *-maidī*, Gk. *-μεθα* undoubtedly represents IE. *-dh-*. The Girnar inscription of Aśoka, which preserves Skt. *-bh-* (*ārabh-* = Skt. *ārabhatē*), in the inst. pl. has *-ēhi* < Skt. *-ēbhiḥ*. For the genitive singular of *a*-stems,

¹ Communicated by Dr. T. Grahame Bailey.

Skt. *-asya*, Pkt. *-assa*, the Prakrit of the Documents from Khotan, although normally *-ss-* (written *s*) remains, shows *-aza*.¹ This, since *-z-* is the normal development of Skt. single *-s-* (*vaza* < *vāsá-*), presupposes a form *-asa*. This *-asa* as a special terminational development of *-assa* is attested also in European Gypsy, e.g. *čores* < *cōrásya*, where *-es* is from *-asa*, *-assa* normally giving *-as* (*asel* 'laughs' < **hasyati*; Pj. *hassṇā*). Apabhramśa, which maintains *-ss-* as *-ss-* or *-s-* with lengthening of a previous vowel, has *-āha* from the termination *-asya*.

This absence of any need to articulate clearly the terminational element led to the special developments observable in the Middle and Modern Indo-Aryan postpositions.

The complex inflexional system of Sanskrit has in the noun been in principle replaced by a direct case based on the old nominative and accusative and an oblique case based in most languages on the old genitive, to which are added various postpositions to express case-relationship. These postpositions are the descendants of full words, and although they have all come into use as such in the comparatively well-documented period between Sanskrit and the modern languages, their phonetic change has been so different from that of normal words, and so extensive, that it is in many cases difficult or impossible to do more than guess at their origin. Let me illustrate. In Hindi *mē* 'in' is from older *mahi*, *māhi*, which appears to represent **mājhi* from Skt. *mādhyē*, a word which survives in Hi. *mājh* m. 'middle', with normal representation of Skt. *-dhy-* as *-jh-*. The Hindi postposition of the dative, *ko* 'to', is from older *kāhu* and, as attested by Old Bengali *kakhu*, represents **kākhu* from Skt. *kākṣam* 'to the armpit', which as a full word survives in Hindi *kākh* 'armpit'. Old Gujarati similarly shows abnormal *-h-* < *-kkh-* in *pāhām* 'by, at' < Skt. *pakṣá-*, beside the full word *pākh* 'side, party'.

The existence of unemphatic forms of the pronouns and the consequent abnormal development of their sounds have long been recognized. Indeed their very nature renders

¹ The symbol for *z*, being a modification of that for *s*, is transliterated by the editors as *s*.

phonetic weakness inevitable. When, referring to a particular object, I say 'give it to me', I can use the word *it* only because my hearer already knows to what I refer; or if I say 'Give me that one', I can use the words *that one* because the thing to which I refer has already been mentioned or is indicated to my hearer by other means, such as a gesture. I have previously (*BSOS.*, v, 43 f.) dealt more fully with the peculiar changes to which the initial consonants of pronouns and pronominal words are liable in many Indo-European languages. The Yājñavalkya Śikṣā states that the *v-* of *vām*, *vā*, and *vai* has a specially light pronunciation (*BSOS.*, v, 45); the *y-* of the relative stem *ya-* quite abnormally disappears in the Middle Indian of Aśoka and in subsequent Prakrits; so too the *y-* of *yuṣmān* 'you' in Pkt. *umhē*¹. Gypsy, which maintains *t-*, has *les* < Skt. *tāsya*. In English we find *that*, *thee*, etc., with voiced *ð*; and in French *donc*, for which unnecessarily complicated explanations have been offered, from Lat. *tunc* (inscriptional *dunc*). The interrogative might at first be expected to escape this weakness, and indeed Gypsy contrasts *kas* 'whose?' < *kassa* with *les* 'of him' < **tasa* < *tassa*. But Gujarati has *śū* 'what?' < *sium* < *kisium* 'of what kind?' as Sindhi has *chā* < **kiśa-* (Skt. *kīḍṛśa-*) with quite abnormal development of the initial. So too Lat. *uter* (*ubi*, *unde*, etc.) < IE. **kʷoteros* and Armenian *ov* 'who?' have an abnormal development of initial *kʷ*.

Not only pronouns proper, but all words of pronominal character, such as adverbs of time, place, or manner, are liable to abnormal phonetic development. Vedic Sanskrit knows only the form *ihá* 'here' (with *-h-* < *-dh-*, OPers. *idā*), although the emphatic form *idha* survived in the Girnar inscr. of Aśoka and in Śaurasēnī Prakrit. But in the Shahbazgarhi inscr. of Aśoka we have a further weakening in *ia* (which, subsequently re-emphasized as **iyya*, appears in the Khotan Prakrit as *iā* [*iśa*, *iḥa*]). So also Skt. *kúha* beside Av. *kudā*, Umbrian *pufe*, Lat. *ubi*. Here too belong such time-expressions

¹ H. Smith, *MSL.*, xxiii, 272, compares this directly with Gk. (Æolic) ὅμμε, but it seems unnecessary to go beyond Skt. *yuṣmān*.

as that referred to by Meillet, OHG. *hiutu* < *hiu tagu*. In Indo-Aryan, Hindi and other languages have *kal* 'yesterday, to-morrow' with abnormal short *a*, from Skt. *kalyam*.

Is it to the partial similarity of their function with that of pronouns that the numerals owe their rather extensive abnormal phonetic development in Indo-Aryan?

One: Aś. Pillar *ikā* < Skt. *ekā*; Pj. *ikk*, as well as *ekk* < Pkt. *ekka*- (re-emphasized as *hikk*). Both with abnormal *i* < *ē*.

Two: Guj. [bē], not *bē < Skt. *dvē*. Since Old Gujarati has abnormal *bi* < *dvē*, and since open unstressed *i* of Old Gujarati normally becomes *a* in Mod. Gujarati, [bē] is presumably a re-emphasized form of an intermediate stage between *bi* and **ba*.

Three: Guj. *tran* < **triṇi* (instead of **trīn*) < Pkt. **triṇni*, *tiṇni*.

Four: Hi., etc. *cār* < Pkt. *cayāri* < Skt. *catvāri*; *tv* normally > *tt* or *pp*.

Six: Skt. *ṣaṭ* < **kṣakṣ* (> Pkt. *cha*, Pashai *ḥa*) with abnormal dissimilation of initial *k*.

Eleven: Pkt. *ēāraha* < Skt. *ekādaśa* with abnormal *-r* < *-d-*, *-h-* < *-ś-*, as with other teens, 12, 15, 17, 18: *bāraha*, etc.

Twelve: Aś. Kāl. *duvāḍasa* with abnormal *-ḍ-*.

Thirteen: Aś. Gir. *traidasa*, Kal. *tedasa*, Shah. *todasa*, with abnormal contraction of Skt. *trayodaśa* (**trayēdaśa*). Man. *tredaśa* also with abnormal *-ḍ-*.

Fourteen: Aś. Pillar *co(d)ḍasa* < Skt. *cāturdaśa*, with abnormal loss of *-t-*.

Fifteen: Aś. Topra *paṁnaḍasā* with abnormal *ṁn* < *ñc*.

Twenty: Pali *vīsati* < Skt. *vimśatī*.¹ with abnormal *īs* < *imś*, as also in *tīsam* < *triṁśāt*, etc.

Seventy: Pa. *sattari* with abnormal *-r-* < *-t-*:

It is not impossible that gabbling in the recitation of series of numbers has had some influence in producing such abnormalities. In a reverse sense, T. N. Dave, in his *Study of the*

¹ Rather than directly < IE. *wik-*; see BSOS., viii, 205.

Gujarātī Language, p. 12, footnote, has shown that the abnormal preservation in modern Gujarati of certain Middle Indian forms was due to deliberate teaching in the medieval schools for children of the trading classes.

In this account of abnormal phonetic development we have been proceeding from words of little or no meaning to words of fuller and fuller meaning. Among words of comparatively full meaning we shall find some adjectives and verbs showing abnormal development.

As a connecting link with the numerals and pronouns come the words for 'all or whole'. French *tout* is derived from a shortened form of Lat. *tōtus*, namely **tōtus* re-emphasized as **tōttus* (otherwise W. Meyer-Lübke, *Romanisches Etym. Wb.*, 8815) and opposed to Span. *todo* < *tōtus*. Skt. *sārva-* 'all' appears in the Khotan Pkt. *zarva-* with abnormal *z-* (*s*), and in Panj. *sab* (not **sabb*), Hi. *sab* (not **sāb*).

Some adjectives denoting admirable qualities may be used with as little meaning as terms of politeness. The loss of meaning in the adjective 'big' is seen in its constant replacement by other and more expressive adjectives, as in English by 'huge, immense, gigantic', etc. So Pkt. *vadda-* 'big' appears in an abnormal form in Guj. *vaḍo* (not **vāḍo*), Hi. *baṛā*, Bg. *baṛa* (not **bār-*) re-emphasized as *baḍḍa*. In French *bon* represents an unaccented form of Lat. *bonus*, which has its normal form in OFr. *buen*. A similar abnormality is seen in the history of Skt. *bhadrá-* 'good', Pkt. *bhalla-*, but Guj., Nep. *bhalo*, Hi. *bhalā* (not **bhāl-*), Pj. *bhalā* (not **bhallā*). Aśoka has *hida-* 'good' beside expected *hita-*.

Adjectives in their attributive use in any case form part of a closely knit word-group. It is therefore of interest to observe that in the Old Gujarati MS. edited by T. N. Dave (op. cit., p. 1), whereas individual words in a sentence are separated from each other by a mark of punctuation, this mark is not placed between the pronominal adjective and the substantive it qualifies. This accounts for the fact that while the instrumental singular of substantives ends in *-aīm*

that of adjectives usually ends in *-ai* (Dave, op. cit., p. 23), though both are equally derived from Skt. *-akēna*.

I come finally to the phonetic abnormalities in verbs. Passing over the well-known case of the verb 'to be' and of auxiliaries which merely define the mode or time of the action of the main verbal idea, let us proceed at once to the less well recognized case of verbs of fuller meaning. Here in several languages we shall find verbs which, owing perhaps to their frequent use, show abnormal phonetic development.

Do : In Indo-Aryan the verb 'to do', though it is not properly an auxiliary, is from its nature often grouped with a substantive or adjective to form a single verbal idea. Throughout its history in Indo-Aryan it shows a number of abnormalities. Pali, which maintains *-s-*, has future *kāhati* beside *kāsati* (formed after *dāsati* < *dāsyāti* with *ā* from *dātum*, etc.). Nepali has *garnu* for *karnu*. Syrian Gypsy has *ker-* for **kār-*.

With this may be compared the Old Persian which, though normally maintaining IE. *r*, has *kunauti* corresponding to Skt. *kr̥ṇōti*. In many later Iranian languages, which maintain *k-*, the *k-* of this verb has become *g-* or *y-* (BSOS., vi, 531).

Say : Sanskrit has *āha* 'says' < **ādha* (attested in Av. *āda* and Skt. 2nd sg. *āttha*). Skt. *brāvīti* is equated with Av. *mraoiti*, and together with probable Keltic and Germanic cognates is derived from an IE. **mrewə-*, *mr̥wə-* (Walde, *Vergl. Wb. der idg. Spr.*, ii, 313). But normally (as Wackernagel, *Altindische Grammatik*, i, § 159, states) Skt. *mr-* is maintained unchanged until in Middle Indian of the Midland it becomes *m-* : Skt. *mriyāte*, Pa. *miyyati* ; Skt. *mrakṣati*, Pkt. *makkhāi*.

Beside Vedic *bhānati* 'speaks' we find Class. Skt. *bhānati*, in which *-ṇ-* < *-n-* is assumed to be the general Middle Indian change. But there seems no reason why the Middle Indian form should have invaded the literary language in this particular word.

In Marathi, in which *bh-* is normally maintained, this verb is *mhaṇ-ṇē*, and in Nepali often it is pronounced *vhaṇ*.¹

¹ Personal observation.

Beside the substantive *ākhañ* 'a saying' with normal *ākh* < Skt. *ākhyāna*-, Panjabi has the verb *āhṇā* 'to say' < Skt. *ākhyati* (Multani *ākhaṇ*, Sindhi *ākhaṇu*, etc.).

Bengali has abnormal *bal*- 'to say' (with *a* instead of *o*) < Pkt. *bolai* (Hi. *bolnā*, etc.).

Outside Indo-Aryan we may compare Lat. *āio*, *āit* beside substantive *adāgium* (Brugmann, *Grundriss*, i², 672). Campidanian dialect of Sardinia *nai* < *narrāre* with abnormal loss of *-rr-* (Meyer-Lübke, *Rom. Et. Wb.*, 5829, without comment). English [*sez*] < *says* (beside *lays*, *brays*, etc.).

Get : Later Vedic has *grah*- beside earlier *grabh*-, although *-bh-* is normally maintained well into the Middle Indian period.¹ Another word for 'get', *labh*-, appears in Aśoka (Jaugada and Dhauri) as *lah*-, with abnormal *-h-* < *-bh-* (contrast the same root *ālabh*- 'to kill' in the same inscriptions). Old Gujarati *lii* 'takes, gets' < Pkt. *lēi*, with abnormal *i* < *ē*.

Give : Aśoka (Topra) has future *dāhamti* with abnormal *-h-* < *-s-* or *-ss-* (Skt. *dāsyāti*, Pa. *dāsati* and *dāhati*). It is, then, perhaps not chance that beside sg. *dādāmi* (δίδομι) we have Skt. pl. *dadmaḥ* instead of expected **dadmaḥ*² (δίδομεν, Lat. *dāmus*); and that a past participle *tta-* (surviving in compounds *ātta-* *prātta-*) in place of normal **dita-* (δοτός, Lat. *dātus*) should have been replaced by a new formation *dattā-*. In the imperative we find only *dēhi* < **dēdhi*. Gujarati in *dii* 'gives' < *dēi* (like *lii* 'takes') has unexpected *i* < *ē*, whereas *-ēhi* normally > *-e*.

Does Lat. *dō*, *damus* (beside Skt. *dādāmi*, Gk. δίδομι) represent abnormal development (through **ddō*, **ddamos*), cf. **di/dō*, **di/damos* attested in the closely related Italic dialects, Vestin. *didet* 'gives', Pael. *dida* 'let him give' = Umbrian *dersa*, and Lat. *reddo* < **re-dido*?

¹ Various causes have been ascribed for this interchange in Sanskrit of *-h-* with *-bh-* (and *-dh-*), in particular the place of the tone or difference in dialectal development and subsequent mixture of vocabulary; cf. Wackernagel, *Altindische Gr.*, i, § 217; Meillet, *IF.*, xxxi, 120.

² Wackernagel, *Altindische Gr.*, i, § 75b accepts this loss as regular in the reduplicated formation.

Put : Sanskrit has *hitá-* for expected **dhítá-* (= $\theta\epsilon\tau\acute{o}s$), a change which Brugmann (*Vergleichende Gr.*, i, 641) restricts to contexts in which it was preceded by a final vowel or Meillet ascribes to the influence of compounds *ā-hita-*, etc., but which equally in either case displays an abnormal *-h-* < *-dh-*. Abnormal *-h-* < *-dh-* again in Pa. *dahati* < *dádhati*. Skt. *dadhmaḥ* for **dadhimaḥ*, like *dadmaḥ*; imperative only *dhēhi* for **d(h)ēdhi*.

Compare Lat. *pōno* < **po-sinō*?

Go : Vedic Sanskrit has only *ihí* (= $\acute{i}\theta\iota$) and seventy-seven times *gahí* (against *gadhi* once), beside *ēdhi* 'be', *śrudhí* 'hear'.

Bhadrawāhi *gāh-* 'go' < *gáčhati* with abnormal *-h-* < Skt. *-cch-*. Guj. *ja-vũ* < O.Guj. *jā-* with abnormal *a* < *ā*.

Ásoka (Dhauḷi) *ēhatha* 'you will go' with *-h-* < *-s-* beside *ēsatha* of Jaugada.

Cf. Lat. *ambulāre* > Fr. *aller*, which Meyer-Lübke (*Rom. Et. Wb.*, 412) explains as 'eine beim Befehl entstandene Kurzform', like Provençal *anár* < *ambitāre*.

The fact of abnormal sound-change, even in the case of words of more or less normal use, cannot be doubted. It remains to be seen whether such change is purely random or whether it fits into some general scheme.

An examination of the abnormal sound-changes of Indo-Aryan discloses two facts of general interest: these changes have either anticipated similar changes that were normal at a later period or have repeated changes which were normal at an earlier period.

Meillet, in considering the problem of the regularity of sound-changes, has rightly stressed the fact that sounds are not isolated phenomena, but form a system, and that any change which occurs affects not an isolated sound, but the system as a whole. In the Germanic sound-shifting not only *p*, but all the unvoiced plosives of Indo-European became spirants.¹

There sometimes appears to be a general tendency towards a particular type of articulation which manifests itself in

¹ Cf. *Introduction* ⁷ p. 33; and M. Grammont, *MSL.*, xix, 245 ff.

particular sound-changes wherever circumstances are favourable. Thus M. Grammont (*MSL.*, xix, 281) postulates for Indo-Aryan a tendency to retract the tongue articulation towards the middle of the palatal arch: this results in Sanskrit in the cerebralization of a *t* following *ś* (*śt* > *ṣt*) and of *-n* preceded in the same word by *r* or *ṣ*, whereas in Prakrit every intervocalic *-n* became *ṇ*. It has been shown (*JRAS.*, 1924, 571) that in Sindhi this tendency manifests itself in the case of Middle Indian *d-* and *-dd-* > *ḍ-* and *-ḍ-*, while *t-* with its more energetic pronunciation is maintained.

Just as the less energetic pronunciation of the lenis *d* allows the manifestation in it of a general articulatory tendency, so also the absence of attention on the part of the speaker while pronouncing a word, or part of a word, is a similar favourable circumstance for the manifestation of the tendency. In Aśoka, where *-d-* is normally maintained, in the numerals Mansehr *trēḍaśa* and Kalsi *duvāḍasa* it has become *-ḍ-*.

The intervocalic single consonants of Sanskrit all tend to open in later Indo-Aryan and to lose their precise articulation. The most favourably placed for this development are the voiced aspirates, and of these the most favourably placed are those involving difficult movements to effect occlusion; and indeed in the pre-Sanskrit period IE. *ǵh* and *ǵʰh* before palatal vowels, having become **ǵ'h* or **d'h*, have lost their occlusion and appear as *h*. In the R̥gvedic dialect *-ḍ-* and *-ḍh-* had lost their occlusion and become *-ḷ-* and *-ḷh-*. Nevertheless *-dh-* and *-bh-* remain generally in Indo-Aryan until at least after the period of Aśoka. But at least a thousand years before the general change of *-dh-*, *-bh-* to *-h-*, this change has appeared in the adverbs *sahá*, *ihá*, *kuhá*; in certain special words (*ád*)*hita-* : *ád**hita-*, *grah-* : *grabh-*, (later Aśokan *lah-* : *ālabh-*); and in certain terminations. These last are instructive.

IE. **medhə*, which is isolated and of course found only in polysyllabic forms, appears in Sanskrit only as *-mahī*. The imperative ending *-dhi*, on the other hand, may occur after stems ending in consonants, such as *pipṛgdhi*, and is frequent

in dissyllabic forms. Nevertheless it appears as *-hi* in certain favourable conditions, e.g. *śṛṇuḥi* (7) against *śṛṇudhī* (5), in dissyllabic forms after a long vowel, *māhi*, *sāhi*, *pāhi*, as opposed to *-dhi* after a short vowel, *kṛdhi*, *vṛdhi*, *śrudhi*, *spṛdhi*. But in the abnormal case of the verb 'to go' even in these conditions we have only *ihī*, and *gahi* seventy-nine times to *gadhi* once.

Intervocalic *-n-*, which already in favourable conditions has become *-ṇ-* in Sanskrit, normally becomes *-ṇ-* in Prakrit. Classical Sanskrit has *bhan-* 'to say', beside earlier *bhan-*.

Intervocalic *-y-* was normally maintained in Pali, but for the most part was lost in later Indo-Aryan languages. Yet Pali already has *āvusō* < **āusō* < **āyūṣaḥ* nom. voc. plur. of **āyús-* = *āyusmant*¹.

The Middle Indian long consonants, resulting from assimilation of Sanskrit consonant groups, have everywhere been shortened except in Panjabi and Lahnda (and here too in favourable conditions). This shortening is anticipated in Pkt. *vaṇe* 'I suppose' (< *maṇṇe* < Skt. *māṇye*), which further shows a development of initial *m-*, realized at a later date in normal words containing intervocalic *-m-*.

-ss- was prematurely reduced to *-s-* in the Khotan Pkt. termination *-aṣa*, and Gypsy *-es*.

Skt. *mūhuh*, if from **mṛhu-* = Av. *m^ozu-*, Gk. *βραχύς* (J. Bloch, *Donum Natalicium Schrijnen*, 369), shows the change in the adverb 'suddenly, often' of *r* > *u*, which was not normally realized till about the time of Aśoka (*mūta-* < *mṛtā-*).

In Pali *imh* > *ih*; later in Prakrit *imṣ* > *īs* (*pīsaī* < *pimṣati*), but *imṣ* and *imś* are still maintained in Pali as *-ims-*. The change in Pali of *imś* to *-īs-* in the numerals *vīsati*, *tīsam*, *cattālīsam* is another example of abnormal, but anticipatory, sound-change in a special class of words.

In all these cases we have been considering anticipatory sound changes which were subsequently realized in later

¹ In this case, however, we have also Vedic *prāyuga-* (if < *prayuga-*) and Pali *āvudha-* < *dyudha-*, neither of which appears to be a word belonging to a special class.

forms of Indo-Aryan. But some abnormal sound-changes appear to be manifestations of a general tendency, which breaking out here and there, only fully realizes itself in the exceptionally favourable conditions of the abnormal word.

The general tendency to voice and open intervocalic consonants extends to *-s-* only over a limited area—in some Dardic dialects it became *-z-*, in Panjabi, Lahnda, and Sindhi *-h-*. But over the rest of the area, where *-s-* is maintained, *-h-* appears abnormally for *s* in numerals, Pkt. *ēāraha*, *bāraha*, etc.; in pronouns, Ap. *ēhu*, *ahu* < *ēsō*, *asau*; in terminations, *-asya* > *-aza* or *-āha*, *-iṣya-* of the future > *-īs-*, *-īh-*, *-ih-* in Prakrit. This *-sy-* is already *-h-* after a long vowel in the three particular verbs ‘to be’, ‘to go’, ‘to give’, *hōhamti*, *ēhatha*, *dāhamti*, and in Pali also in the verb ‘to do’, *kāhāmi*.

Initial *bh-* is generally maintained as an occlusive in Indo-Aryan, but in Bengali it has opened to *v-* or *-v-*. This change has occurred in a word of address in Panjabi *vhāi* < *bhāi*, in the verb ‘to say’ in Nepali *vhani* < *bhani*. And doubtless Marathi *mhaṇ-ṇē* ‘to say’ represents a **vhaṇ-ṇē* (with *v* nasalized from following *ṇ*) < *bhānati*.

Intervocalic Skt. *-t-*, like other intervocalic unvoiced plosives, was everywhere voiced at some period after Aśoka, yet in Aśokan inserr. we have *hida-* ‘good’ for *hitá-*; and Pali, maintaining *-t-*, has *-d-* in the accessory word ‘or’, *udāhu* < Skt. *utāhō*. This *-d-* subsequently became *-y-* and disappeared over most of the Indo-Aryan area. What were the intermediaries between *-d-* and *-y-*, we cannot prove. Only in the north-west in Chitrali and Kalasha, in Syrian and European Gypsy, where it becomes *r* and *l*, have we evidence for an intermediate *ḍ*. This tendency for an intervocalic dental to become a spirant resulting in *r* is already realized by the time of Aśoka in the pronominal *tārisa-*, *yārisa-* (< Skt. *tādṛśa-*, *yādṛśa-*); in the Pali numerals *sattari* < *saptatī-*, *bāraha* < *dvādaśa*, etc.

Finally, although Skt. *mr-* generally becomes *m-*, nevertheless the tendency displayed in intervocalic *-mr-*, which generally became *-mbr-* > *-mb-*, is manifested in one Dardic language,

Khowar, which has *br-* < *mr-*, e.g. *brium* 'I die' < **mriyāmi*. It is precisely this development which is anticipated in Sanskrit in the verb 'to say', *brū-* < **mrū-*.

These facts enable us to draw the following conclusions with reference to sound-change in general.

1. The greater the loss of meaning in a word (to which doubtless frequency of use largely contributes), the earlier is the manifestation of any particular sound-change in that word.

2. For a period at least both the old and the new sound are used in a language, and probably by the same speakers. In Indo-Aryan it took at least a thousand years to establish the new sound *-h-* in place of the old *-dh-* in all the words in which *-dh-* originally appeared.

3. A general tendency towards change of sound in a particular direction (e.g. cerebralization of consonants) may persist in a language for a long period of time, manifesting itself from time to time in different parts of the linguistic area, or wherever conditions specially favouring the change occur.

I will not here venture any speculation as to what the phonetic realities are which condition such a tendency.